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Research Article

IMPACT OF HEAVY METAL IN FISHES ON CONSUMER CENTRIC MARKET

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Abstract- Fish are characterized by the nutrients that ensure proper growth and functioning of the body. They provide wholesome protein, fats, vitamins, and minerals. The fat content of fish meat varies widely depending on the species, age, season, habitat and feeding. Fish fat raises special interest among dieticians. Contains He is a long-chain polyunsaturated fatty acid in his composition omega-3, including Eicosapentaenoic (EPA) and Docosahexaenoic Acid (DHA), which are not synthesized in the human body and are necessary for its proper functioning. A diet low in omega-3 fatty acids increases the risk of many diseases such as cardiovascular disease. There is a positive tendency to consume oily fish with high levels of polyunsaturated fatty acids. Regular consumption of rich polyunsaturated fatty acids can help reduce the risk of coronary heart disease and cardiovascular disease, proper functioning of the nervous system, and the level of beneficial HDL cholesterol fraction inhibits some tumors. Larger amounts of DHA and EPA are available in greasy sea fish, such as salmon. Only about 30% of consumers consume the products fish in the recommended amount 2-3 times a week. The consumer nowadays has more access to information flow and thus cross examines the food for its nutritional specifics and its hazards to health. Human being is the last in the food chain, so any damage that happens in the environment and ecology affects them ultimately. All these consumer's latent movements finally affect in the attitude leading to a psycho-social behavioral changes, for or against the market's economic process and progress. It is essential to conduct ongoing educational campaigns that promote consumption of fish and their products and influencing the shaping of proper nutritional behaviors.

Keywords- Fish, Consumer requirement, Dioxins, Heavy metals, Fisheries management

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Introduction

Heavy metal accumulation in fishes

The main cause is water pollution. The sources, among others are industry, intensive farming, oil, municipal and industrial effluents. Harmful substances can get into the human body along with food. This applies mainly to fish, seafood and fish products, when contaminated with heavy metals, pesticides and dioxins. The amount of these toxic substances depends on the species of fish, the water body in which they live, and their age. Live fish cumulatively accumulate more heavy metals than living shorter ones.

Heavy metals that are hazardous to health include: mercury, cadmium, and lead. Mercury occurs mainly in the form of organic and inorganic connections. The highest toxicity of mercury is found in the organic compounds that result from the transformation of inorganic compounds in the aquatic environment. People are exposed to this form of mercury by eating fish and seafood. Mercury is toxic to the human body, mainly to the nervous system. According to Commission Regulation (EU) [1] the permitted consumption of fishery products and fish meat is: 0,050 mg / kg; The species of fish: anglerfish, stingray, pelamidae, eel, guinea, grenadier, halibut, marlin, makaira, mealybug, piglet, pike, orcyn, karlik, iberian iris, raja, redfish, sailfish), gempel or squash, sturgeon, swordfish, tuna acceptable intake is 1.0 mg / kg. Another heavy metal is cadmium in the form of chlorides and sulphates. It negatively affects the work of the entire body, and above all it disrupts the functioning of the reproductive system.

Heavy metals in fishes where identified and with more concentration of Fe and Co were found in the tissues of the fish using atomic absorption spectrometry. Fish are often used as bio-indicators of pollution Environment of heavy metals and other toxic or harmful substances [2,3]. Global Market Finder Heavy metals in fish can alter the metabolic and physiological function of the fish. This also affects the quality of meat of fish. The heavy metals in different fish organs are hazardous with health implications on populations who consume them. Szymonik & Lach [2] report that the pollution of the environment with heavy metals is increasing with the development of industry. In the aquatic environment, heavy metals may accumulate in bottom sediments and penetrate aquatic organisms, including: fish, plankton, benthos. The presence of heavy metals, such as zinc (Zn), copper (Cu), lead (Pb), cadmium (Cd), and mercury (lig), were most commonly found in fish and fish, such as carp, trout, Cod, herring, mackerel. Heavy metals are much more likely to accumulate in more bloody organs, that is, in gills and liver compared to muscle tissue. In the liver at higher concentrations than in meat there is copper, zinc, cadmium, and in muscle tissue predominates mercury. Heavy metal accumulates influence: fish size, age and diet. Much higher concentrations of heavy metals were found in carnivorous fish and eating organisms living on the bottom. Consuming contaminated meat can pose a threat to human health. Research is particularly concerned with the presence of heavy metals (in particular mercury) and dioxins (and their derivatives) in fish. It is these substances that are most characteristic of fish [3]. Some animal wastes like livestock, poultry and pig manures created in agriculture gets also used as food in aquaculture pond and usually supplied to fish either in the form of solids or semi solids. The manures

that are created from animals because of these diets possess greater amounts of Cu, As and Zn and if continually supplied as fish feed in pond, can result in reasonable accumulation of these metals in the longer period in these sediment [4]. Unlike ponds the Arabian Gulf contains a variety of relatively fragile ecosystems that are associated with an environment that is naturally highly stressful with very high evaporation rates, poor flushing characteristics, elevated temperatures, salinity, and UV exposure. Therefore, contaminants are more likely to undergo limited dilution, slower dispersion, and residing in the area for a longer time [5, 6].

Threats related to mentality

Fish most often consumed in Europe include mercury and tuna, but also: perch, eel, roach, cod, due to the high content of mercury should not also eat swordfish Marlin, king mackerel, shark meat, and low panga and tilapia. The smallest of these elements is found in small, short-lived fishes located at the very bottom of the food chain, for example in spleen, sardines, albacore, and wild salmon (but not from breeding). Mercury, like dioxins, is cumulative in living organisms, so choose non-predatory, short-lived, clean-living fish. In general, small amounts of mercury do not pose a threat, but some fish contain enough of this to damage the fetus or harm the breast-fed newborn. Specialists also recommend that pregnant women, nursing mothers and children below six years of age eat up to two servings of fish per week, which should be fish species with as little mercury as possible. This element, once reached the right concentration in the human body can be harmful also for healthy adults. High levels of mercury in the body can cause permanent damage to the kidneys and brain [7]. The European Food Safety Authority (EFSA) has identified several species of fish that are particularly contaminated. They are marlin, shark, swordfish and tuna. Most of the mercury and dioxins are found in predatory fish and those that live long (eg tuna live for 10 years) and inhabit contaminated tanks. According to experts, the cleanest water from which the healthiest fish are caught is the Pacific Ocean and the Atlantic Ocean, and the North Sea. According to researchers from the Maritime Fisheries Institute in Baltic fish. There are no exceedances of permissible levels of mercury and dioxins and a slow decline in the content of these pollutants is observed [7], that the ratio between cadmium content is not so unequivocal and largely depends on the organ - in some parts of the world the higher content of this element occurs in the kidneys and gills of the fish, while in others - in the muscles. Human are at great risk of metal contamination depending on the fish spawning seasons. Metal concentrate water moves into the food chain through fishes consumed by human beings resulting in numerous nutritional and health issues. The effect of pollutants and avoidance mechanism can reduce the accumulation of heavy metals in the fish tissue.

Sources of contamination

Reproduction in fishes is regulated by water quality, which is an external environmental factor that triggers internal mechanisms [8] further, concentrations of heavy metals in the water impacts ecological significance [9]. Slow-flow conditions enhance sedimentation as the influx of fresh water being minimal. By removing heavy metals and other pollutants from the water at low tide and during the dry season facilitates ambient conditions for reproduction. Chronic exposure to pollutants over a period causes physiological, behavioral, and biochemical host changes that ultimately can influence the prevalence and intensity of parasitism.

Deposition of contaminants

The distribution of metals in sediments adjacent to human settlement areas has significant impact from urban and industrial waste disposal on ecosystems, which aid the risks associated with it. The accumulation of metal sediments affects environmental implications for local communities through food source and susceptible to toxic bioaccumulations. The most common and most dangerous from a health point of view are heavy metals: lead, cadmium, copper, mercury and zinc. Natural sources of pollution of the natural environment are mainly dust and gases from volcanic eruptions and forest fires (the latter are likely to trigger lead already present in the environment). According to Steiger [10], these sources supply 1800 tons of this metal per year to the soil. Human activity: mines, smelters, automotive, industry, and agriculture (mainly phosphate fertilizers and pesticides) account for about 440 thousand tons per year. The content of different isotopes of lead in soil can be a practical indicator of how much of this element is derived from natural sources and which has been introduced because of human activity [11].

The main source of pollution of the atmosphere, soil and surface waters of cadmium are: iron and steel industry, mainly zinc smelters, chemical industry, as well as battery and battery factories. The use of appropriate technologies in these industries can significantly reduce the emission of this element. The degree of environmental poisoning depends on the type of materials used in the industry. Local pollution can also be caused by natural fertilizers: Animal excrements and municipal sewage. An indirect source of cadmium may include Phosphates used as a mineral additive for feed [12]. The severity of heavy metals varies considerably. As far as lead and cadmium are toxic metals, zinc and copper are microdermabrasions that are harmful only in excess, while lesser amounts are necessary for proper functioning of the body.

Impact of the environment

Water environment has a major influence on the concentration of heavy metals. Szymonik A Lach [2] have shown significant influence of species and living environment on lead content in fish muscle tissue. Indeed ($P \leq 0.05$) the lowest Pb concentration (0.0429 mg · kg-1) was found for muscle of fish with aquaculture, whereas marine and freshwater fishes, wild ones contained similar lead content (0.11419 and 0.11644 mg · kg^{-1}, respectively). The highest number of lead included herring muscles (0.2349 mg · kg^{-1}) and roach (0.2145 mg · kg^{-1}), rainbow trout and carp (about 0.043 mg · kg^{-1}). It has been estimated that for children a safe portion of herring and roach meat (considering the lowest doses Should designate BMDL01) should not exceed 75 g and 82 g, respectively. Purakait et al. [13] indicated that climatic variations in the lower Gangetic delta has rised the water temperature and modified the salinity and pH of the aquatic phase. Such changes have caused a significant alteration in the diversity spectrum of fin fishes prevailing in the system. The Shannon Weiner species diversity indices calculated from the yield of commercially significant and trash fin fish varieties depicts that a clear temporal variation in both western and central sectors of Indian Sundarbans that have contrasting geo-physico-chemical features. The western Sundarbans of India showed a normal increase of marketably significant fin fish diversity, whereas the central sector had the variations of the trash fish variety increased over a period of more than two decades. The economic return from the fish catch (as revealed from the feedback of 837 fishermen) also exhibits a pronounced variation, with a gradual decrease [14].

Ecological impact

Concentrations of heavy metals affect marine ecosystems and thereby affects human health when exposure through the food chain in fish normally meet the consumption standards. In some cases, even higher than the safety limit, however reviewing an overall view on pollution levels and health risks posed by heavy metals in fish pose great danger to the various elements of the food chain in any given environment provide reasonable evidence on the utmost need to fully assess the risks of heavy metals and other pollutants to safeguard the health of the community. Fish are often used as bioindicators for environmental pollutants with heavy metals and other toxic or harmful substances [15] were evaluated condition factor of fourteen commercially important fin fish species collected from the Hugli and Matla estuaries in the western and central sectors of the lower Gangetic delta respectively. Relatively higher values of condition factors of all the species collected from the Hugli estuary (compared to those collected from the Matla estuary) signifies the adverse effect of hyper salinity on the growth and condition factor of the species [16]. In Egypt, the Red Sea is of great ecological interest; it is an important source of fisheries and tourism industry. Despite that, heavy metals' studies in the Red Sea are restricted. Relatively few studies investigated the levels of metals in some fish species from the Red Sea [17, 18]. However due to increasing anthropogenic and industrial stress on the Red Sea, continuous monitoring of the environmental conditions of the Red Sea is required.

Remedial measures

The high level of toxic metals in nematode parasites are sensitive indicator of heavy metals in aquatic ecosystem environmental pollution of sea; acts as bioremediator of heavy metals in fish [19]. The heavy metal concentration was more in the parasites and less in the liver of infected parasites perch than in the non-infected fish. Azmat et al. [20] carried out parallel analysis of heavy metals (Pb, Cd, Hg, As, Zn and Fe), were in muscles and guts of fishes, seawater and fish parasites, were detected by atomic absorption Spectrophotometry. Bioaccumulation strength of heavy metals was assessed for toxicity in the *Echinocephalus* sp. and *Ascaris* sp., a natural bio-remediator of heavy metals. It suggests that infected fish contain low concentration of heavy metals in their muscle as compared to non-infected one. The high level of toxic metals in Echinocephalus sp. and Ascaris sp. indicates, that nematode parasites are vulnerable indicator of heavy metals in aquatic ecosystem depicting a support too burdensome of environmental degradation of sea and as a bioremediator of heavy metals in fish. To ensure a high level of public health, the European Union Council Regulation (EEC) laying down maximum levels for certain contaminants in foodstuffs [1]. This standard depicts maximum levels for few contaminants in food, to protect the health of the less opportune group of the population, i.e., young and the grown-ups.

Renewed Consumer Market

The market has progressed and evolved new, fishes are nutritious foods [21, 22]. Fish contribute 40 percent of the animal-source protein other valuable nutrients such as zinc, iron, and B vitamins [23] and hence trust people have on the goods needs to be revalidated. The market today is consumer centric, demanding alternative forms of food cultivation (from plants / animals / fishes). The increased demographic pressure impacts upon fish, and rising salaried employment has reduced the time available for hunting and fishing. Individuals now have a disposal income that enables them to purchase it commercially. This puts pressure on revalidating the process, ensuring delivering the customer their expectations and finally sustaining for repeatability of sale of healthy food and also as medicine.

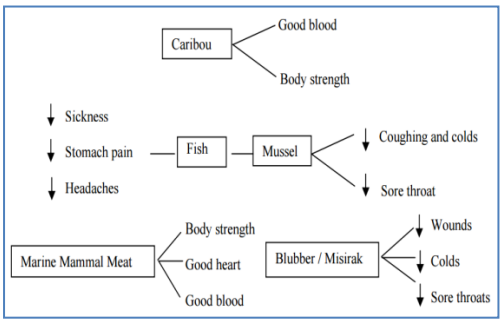

Fig-1 Medicinal properties of Fish Consumption
Source: Nunavik Inuit Health Survey 2004 [24]

The main medicinal properties reported for fishes are that they provide good blood and body strength. Fishes is illustrated in [Fig-1] have properties to reduce sickness, stomach pain and headaches, and mussels to relieve coughing, colds and sore throats. The meat of marine mammals provides body strength, a strong heart and good healthy blood. Blubber and misirak have proprieties to relieve wounds, colds and sore throats.

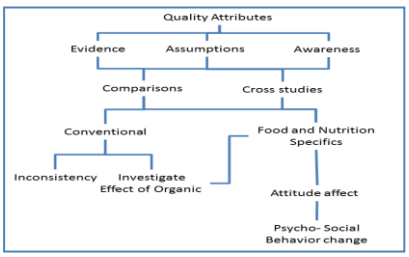

Fig-2 Urban Foods (Science and Logic)
Source: Krishnan Umachandran [25]

Ohio EPA Division of Surface Water stated in its 2017 report that fish with low levels of contaminants are safe to eat, provided the trimming, cooking and meal frequency. The food quality is illustrated in [Fig-2] needs to be clarified on evidences, assumptions and awareness of change that should come within the consumer. Consumer is aware and compares through conventional sources for inconsistencies or even through investigation on the effect of the food products. When the global market has turned towards organic (deliver pure and wholesome, but no impurities), the fishing industry needs to revamp and deliver the right quality in sea harvest of fishes. Only about 30% of consumers consume the products Fish in the recommended amount 2-3 times a week. There is a positive tendency to consume oily fish with high levels of polyunsaturated fatty acids. The consumer nowadays has more access to information flow and thus cross examines the food for its nutritional specifics and its hazards to health. Normally human being is the last in the food chain, so any damage that happens in the environment and ecology affects them ultimately affecting to a greater extent. All these consumer's latent movements finally affect in the attitude leading to a psycho-social behavioral changes, for or against the market's economic process and progress.

Standards of heavy metal content in fish meat

Concentration of heavy metal in fish samples were found to be less than the permissible limits indicated for fish by various standards including the European Union (EU), World Health Organization (WHO), and Turkish guidelines (TFC). According to Commission Regulation (EU) the permitted mercury concentration in fish is 0.30 mg / kg and the acceptable consumption of fishery products and fish meat is: 0.50 mg / kg except for species such as mackerel and tuna 0.10 mg / kg; Tazan marun: 0.15 mg / kg; Anchovy, swordfish, sardine: 0.25 mg / kg: crustacea: 0.50 mg / kg; Mussels: 1.0 mg / kg; Lead can be found as lead nitrate and lead acetate. Its excessive amounts disturb the respiratory and blood vessels [1].

The concentrations of manganese (Mn), copper (Cu), zinc (Zn), nickel (Ni), cobalt (Co), lead (Pb) and cadmium (Cd) in the muscles of grey mullet (Mugil cephalus) that were obtained from Gaza fishing harbor and the precints were then analysed in this study. Eight sampling locations were identified to experiment the study along the coast of Gaza. The samples were taken in September, November 2013 and March 2014. The heavy metals average concentration in soft tissues of fish were identified as follows: Mn: 0.90µg/g; Cu:13.15 µg/g; Zn:25.87 µg/g; Ni:1.10 µg/g; Co:0.68 µg/g; Pb:1.82 µg/g and Cd:0.27 µg/g, respectively [1].

Fish Inspection Regulations in Canada and Code Markings

(1) Every carton and case in which containers of fish are packed at an establishment shall be legibly marked on one end in such a manner that the name of the establishment and the day, month and year of processing can be determined by an inspector.

(2) Every container in which pickled, spiced or marinated fish are packed at an establishment shall be legibly marked in such a manner that the name of the establishment and the day, month and year of processing can be determined by an inspector.

Ad. (1) Each of the canned fish is then packed in a registered establishment shall be affixed or rejected with visible, permanent and legible with.

Table-1 *Code markings of fish*

Product		First letters of code marking
1. Salmon	Blueback	B
	Chum	K
	Coho	C
	Pink	P
	Sockeye	S
	Spring	T
	Steelhead	H
	Mixed species of minced salmon	M
2. Lobster		L
3. Tomalley or lobster paste		LT
4. Lobster cocktail		LC

Source: http://laws-lois.justice.gc.ca/eng/regulations/C.R.C._c._802/page-8.html#h-5

A copy of the key to each code mark required in this point will be sent to the President of the Agency each year before the processing operation. SOR / 99-169, p. 6; SOR / 2000-184, p. 59; SOR / 2002-354, p. 33 [Table-1]. Notwithstanding subsection 32 (1), each sealed glass container containing fish shall be exempt from the extrusion requirement of this Chapter if the container or labels affixed to it otherwise permanently marked with the indications required by that paragraph [26].

Common Fisheries Policy (CFP) - EU Fisheries Management

The CFP Organized to control a shared resource, to offer European fishing fleets equal access to EU waters and fisheries and permits those fishermen to equitable market. The CFP was introduced for the first time in 1970 and has undergone further updates, the most recent ones having impacted on 1 January 2014. The CFP aims to ensure that fisheries and aquaculture are ecologically, economically, and socially sustainable and that they provide a source of healthy food for EU citizens. Its purpose is to support the dynamic fishing industry and to ensure an adequate standard of living for fishing communities. Although it is important to maximize catch, there must be boundaries. We need to make sure that fishing practices will not harm the reproducibility of the fish population. The current policy foresees that fishing quotas should be set in the years 2015 and 2020 that are sustainable and maintain fish stocks in the long run. To this day, the impact of fishing on the fragile marine environment is not fully understood. For this reason, the CFP adopts a cautious approach that recognizes the impact of human activities on all elements of the ecosystem. It seeks to make fishing fleets more selective in what they catch, and the gradual withdrawal of the practice of rejecting unwanted fish. The reform also changes the way the CFP is managed, giving the EU countries more control at national and regional level. The CFP has 4 main policy areas: Fisheries Management International Policy Market and Trade Policy Financing of the EFF 2007-2013 Policy EMFF 2014-2020 The CFP also covers aquaculture and stakeholder engagement [27].

Avoid primarily predatory fish, which eating other animals collect more toxic substances. When you purchase, you need to pay attention to where the fish comes from and whether it is MSC certified to ensure that it comes from sustainable fisheries and properly managed fisheries. It is better to choose fish from local fishing, which will reduce the time of fish transport. The diversity of species is also important. If we buy many species of fish, we will help limit the catch of these most popular species. It is good to know about the origin of fish before buying. When deciding to buy fish you should also have knowledge about the safety of their fishing and whether we choose species that are endangered by extinction [Fig-4].

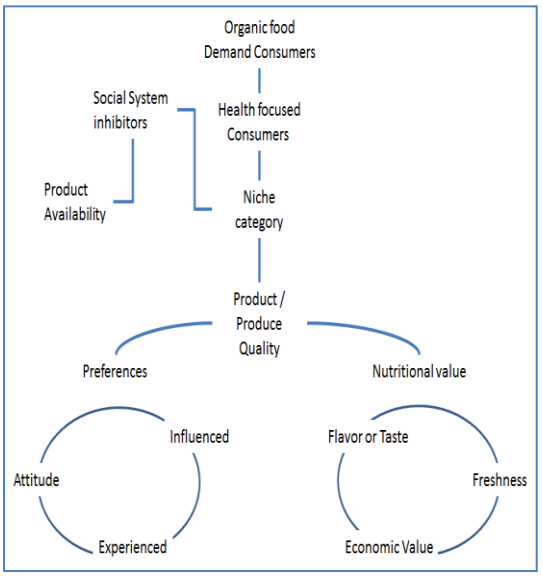

Fig-4 Urban Foods (Consumer Demands)
Source – Krishnan Umachandran (2015) [25]

Fish as a food available is illustrated in [Fig-4] in the local markets should be a assured form of purchase for healthy consumptions. Fish worth eating, mainly due to the content of beneficial omega acids. According to the World Health Organization, omega-3 fatty acids should represent 5-8% of daily energy, or 18 g per day in food. The human body is best absorbed and utilizes omega-3 EPA + DHA acids, which are present primarily in fish and seafood. The society should have no doubts lingering in their minds to inhibit the market transaction. Furthermore, fishes are positioned as that with good nutrition (unavailable in other form of food); and very sumptuous as a food globally. The health of fish passes on, to all the varieties and forms of it being cooked, packed, stored, delivered and consumed [28,29]. Labile and essential nutrients (proteins, vitamins, lipids, minerals) present in the raw fish are exposed to different processing conditions that can reduce the nutritional and sensory values of the final product [30]. The product life of fish products evaluation of food quality [31] should be reliable for being preferred and deliver the nutritional value intended. Culinary fish processing, like cooking, frying, lead to a significant increase in the concentration of most metals tested and a decrease in Fe, Cr, and Pb concentrations in some species of fish. Estimated content of Cd, Pb, Cr, Zn, Fe, Cu, Mn, Ni, Hg in processed fish were statutory safe limits [32].

Table-2 *Estimated daily intake of metals (μg kg⁻¹ bw day⁻¹) from consumption of 20.8 g of fish per day*

Metal	*Chrysicthys nigrodigitatus*			*Polydactylus quadratifilis*			*Cynoglossus senegalensis*			Permissible tolerance intakes (PTI) per day/μg per day/60 kg body weight
	Boiled	Grilled	Fried	Boiled	Grilled	Fried	Boiled	Grilled	Fried	
Cd	0.007	0.02	0.007	0.004	0.007	0.004	0.004	0.004	0.004	0.35[1]
Pb	0.013	0.02	0.016	0.011	0.016	0.016	0.015	0.014	0.015	3.6[2]
Cr	0.004	0.005	0.004	0.003	0.005	0.004	0.005	0.004	0.006	200[3]
Zn	0.23	0.32	0.30	0.57	0.42	0.38	0.02	0.48	0.502	12000[4]
Fe	0.52	0.54	0.57	0.354	1.214	1.328	0.61	0.59	0.64	12500[4]
Cu	0.10	0.10	0.10	0.038	0.14	0.06	0.05	0.10	0.11	5000[5]
Mn	0.005	0.073	0.069	0.035	0.060	0.066	0.055	0.09	0.143	–
Ni	0.003	0.003	0.003	0.003	0.011	0.191	0.002	0.009	0.012	12[6]
Hg	0.003	0.006	0.003	0.003	0.005	0.003	–	–	–	1

EFSA (2011).[2]WHO (2003). [3]RDA (μg/day). [4]RDI (μg/day) (NRC (National Research Council) 1989); [5]TDI μg/day (EU 2003). [6]WHO (2008)

The content of Hg, Cd and Pb in Mediterranean Sea fish consumed in Italy, was estimated that the intake of these elements in the diet and calculated the THQ and EWI coefficients [Table-2]. This type of research and customer information will help consumers make the choice when buying fish. The weekly results of the hazard ratios evaluated for Cd, Hg and Pb toxicity in fish and crustaceans and showed that cooked fish and crustaceans posed no risk to consumer health. The individual values, THQs and total THQs were less than 1, indicating that there is no health hazard resulting from the long-term use of these fish species.

Conclusions

Contamination of the natural environment entails risks to the aquatic environment, including fish. Because of their purchase, it should be noted that their origin is MSC certified, which ensures that they come from sustainable fisheries and properly managed fisheries. It is best to choose fish from local fishing, which will reduce the time of their transport. Fish fat contains long-chain, polyunsaturated fatty acids, including omega-3 acids, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), which are not synthesized by humans and are necessary for proper functioning. A diet low in omega-3 fatty acids increases the risk of many diseases such as cardiovascular disease, while regular consumption of products rich in polyunsaturated fatty acids may reduce the risk of coronary heart disease and cardiovascular disease, promote proper functioning of the nervous system, The level of beneficial HDL cholesterol and inhibit the growth of some cancers. Larger amounts of DHA and EPA provide the consumption of greasy sea fish. In addition to nutrients, fish can also be a source of harmful

substances such as dioxins, heavy metals. Acceptable limits for these substances for fish are proposed by various international standards such as the World Health Organization (WHO), the European Union and others. It is also necessary to conduct ongoing educational campaigns promoting the consumption of fish and their products and influencing the development of proper nutritional behaviors

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Author Contributions: All author equally contributed

Abbreviations:
WHO: World Health Organization
CFP: Common Fisheries Policy
EFSA: European Food Safety Authority

Conflict of Interest: None declared

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[1] Regulation (EU) 2015/812 of the European Parliament and of the Council of 20 May 2015 amending Council Regulations (EC) No 850/98, (EC) No 2187/2005, (EC) No 1967/2006, / 2007, (EC) No 254/2002, (EC) No 2347/2002 and (EC) No 1224/2009 and Regulation (EU) No 1379/2013 and Obligation to land and repealing Council Regulation (EC) No 1434/98. Regulation (EU) 2015/1005 of 25 June 2015 amending Regulation (EC) No 1881/2006 as regards maximum levels of lead in certain foodstuffs (Text with EEA relevance). *Official Journal of the European Union, L 161/9.* Council Regulation (EEC) No 315/93 of 8 February 1993 laying down maximum levels for certain contaminants in foodstuffs (*OJ L 37, 13.2.1993*)
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